

What is claimed is:

1. Portable apparatus for housing electrically powered components, said apparatus comprising:

an electrically groundable portable platform;

a shell supported on said portable platform and being electrically grounded thereto, said shell having a plurality of exterior wall portions and housing the electrically powered components therein, said shell fabricated from electrically conductive material;

an enclosure having a common exterior wall portion with said shell and being attached thereto, said common exterior wall portion being lined with a magnetic shield material; and

at least one power supply cable entering said enclosure through said common exterior wall portion and said magnetic shield material.

2. The portable apparatus of claim 1 wherein said shell is attached to said portable groundable platform by at least one shock absorbing mount and at least one grounding conductor.

3. The portable apparatus of claim 2 wherein at least one shock-absorbing mount comprises:

a base member coupled to said portable platform, said base member having an attachment member protruding therefrom for attachment to said shell; and

a flexible member between said base member and said shell.

4. The portable apparatus of claim 3 further comprising a leg corresponding to each said shock absorbing mount and coupled to said attachment member such that said flexible member is between said leg and said base member, said leg being coupled to said shell.

5. The portable apparatus of claim 4 wherein each said leg is pivotably coupled to said shell.

6. The portable apparatus of claim 1 wherein said portable platform comprises:  
an electrically conductive frame;  
a plurality of wheels mounted to said electrically conductive frame; and  
at least one electrically conductive outrigger assembly coupled to said electrically conductive frame and selectively movable between a grounding position and a non-grounding position.

7. The portable apparatus of claim 6 wherein said at least one said outrigger assembly is selectively laterally extendable and retractable relative to said electrically conductive frame.

8. The portable apparatus of claim 7 wherein said outrigger assembly comprises:  
a vertical support housing having a selectively extendable and retractable support leg therein; and  
a lateral support member telescopingly received in a corresponding portion of said electrically conductive frame and coupled to said vertical support member such that said

vertically support member can be selectively laterally extended and retracted relative to said electrically conductive frame.

9. The portable apparatus of claim 8 wherein said selectively extendable and retractable support leg may be selectively extended and retracted relative to the vertical support housing by a crank assembly.

10. The portable apparatus of claim 6 wherein said electrically conductive frame supports at least one floor panel thereon.

11. The portable apparatus of claim 10 wherein at least one said floor panel is fabricated from wood.

12. The portable apparatus of claim 1 further comprising a selectively extendable mast supported on said portable platform and electrically grounded thereto.

13. The portable apparatus of claim 12 wherein said selectively extendable mast is articulated.

14. The portable apparatus of claim 13 wherein said selectively extendable mast comprises:

a mast base supported on said portable platform and being electrically grounded thereto;  
and

a series of at least two pivotally interconnected mast segments supported by said mast base.

15. The portable apparatus of claim 13 wherein said selectively extendable mast comprises:

a mast base supported on said portable platform and being electrically grounded thereto;  
and

a first mast segment pivotally coupled to said mast base and being selectively movable between a position wherein said first mast segment is coaxially aligned with said mast base and other positions wherein said first mast segment is not coaxially aligned with said mast base.

16. The portable apparatus of claim 15 wherein said first mast segment is pivotally coupled to said mast base by a first joint assembly comprising:

a first hinge block coupled to an end of said mast base; and  
a second hinge block pivotally hinged to said first hinge block and coupled to an end of said first mast segment.

17. The portable apparatus of claim 16 wherein said mast base comprises:  
a mast post coupled to said portable platform and protruding therefrom and wherein said first hinge block comprises:

a mast socket in said first hinge block, said mast socket sized to receive an end of said mast post therein; and

a first hinge assembly mounting portion on said first hinge block adjacent said mast socket and wherein said second hinge block comprises:

first socket in said second hinge block, said first socket sized to receive an end of said first mast segment therein; and

a second hinge assembly mounting portion on said second hinge block adjacent said first socket and wherein said first joint assembly further comprises a hinge assembly mounted to said first and second hinge assembly mounting portions and defining a pivot axis such that when said first mast segment is coaxially aligned with said mast post, an end of said first hinge block is in confronting relationship with an end of said second hinge block.

18. The portable apparatus of claim 17 further comprising first releasable retaining means for selectively retaining said end of said first hinge block in confronting relationship with said end of said second hinge block.

19. The portable apparatus of claim 18 wherein said first releasable retaining means comprises fasteners selected from the group consisting of bolts, pins and clamps.

20. The portable apparatus of claim 16 wherein said first and second hinge blocks are fabricated from cast metal.

21. The portable apparatus of claim 16 wherein said first and second hinge blocks are fabricated from metal and are of welded construction.

22. The portable apparatus of claim 15 further comprising means for pivoting said first mast segment between said position wherein said first mast segment is coaxially aligned with said mast base and other positions wherein said first mast segment is not coaxially aligned with said mast base.

23. The portable apparatus of claim 22 wherein said means for pivoting comprises a device selected from the group of devices consisting of a hydraulic cylinder, a pneumatic cylinder, and a stepper motor.

24. The portable apparatus of claim 15 further comprising a second mast segment pivotally coupled to an end of said first mast segment.

25. The portable apparatus of claim 24 wherein said second mast segment is pivotally coupled to said first mast segment by a second joint assembly comprising:

a third hinge block coupled to the end of said first mast segment; and

a fourth hinge block pivotally hinged to said second hinge block and coupled to an end of said second mast segment.

26. The portable apparatus of claim 24 further comprising a third mast segment pivotally coupled to an end of said second mast segment.

27. The portable apparatus of claim 26 wherein said third mast segment is pivotally coupled to said second mast segment by a third joint assembly comprising:

a fifth hinge block coupled to another end of said second mast segment; and  
a sixth hinge block pivotally hinged to said second hinge block and coupled to an end of  
said third mast segment.

28. The portable apparatus of claim 26 wherein said second mast segment is  
selectively pivotable relative to said first mast segment from a position wherein said second mast  
segment is adjacent to said first mast segment and another position wherein said second mast  
segment is coaxially aligned with said first mast segment.

29. The portable apparatus of claim 28 wherein said third mast segment is selectively  
pivotable between a position wherein said third mast segment is adjacent said second mast  
segment and another position wherein said third mast segment is coaxially aligned with said  
second mast segment.

30. The portable apparatus of claim 26 wherein said second mast segment is  
selectively pivotable relative to said first mast segment from a position wherein said second mast  
segment is coaxially aligned with said first mast segment and another position wherein said  
second mast segment is adjacent said third mast segment.

31. The portable apparatus of claim 30 wherein said third mast segment is selectively  
pivotable between a position wherein said third mast segment is coaxially aligned with said  
second mast segment and another position wherein said third mast segment is between said first  
mast segment and said second mast segment.

32. The portable apparatus of claim 26 further comprising an antenna supported by said third mast segment.

33. The portable apparatus of claim 1 further comprising power generating means on said portable platform.

34. The portable apparatus of claim 33 wherein said power generating means at least comprises at least one battery.

35. The portable apparatus of claim 33 wherein said power generating means at least comprises a generator, at least one solar panel or at least one fuel cell.

36. The portable apparatus of claim 35 wherein said generator is propane powered.

37. The portable apparatus of claim 35 wherein said generator is gasoline powered.

38. The portable apparatus of claim 12 wherein an antenna conductor is supported on said selectively extendable mast, said antenna conductor entering said enclosure through said common exterior wall portion and said magnetic shield material.

39. Portable apparatus for housing electrically powered components, said apparatus comprising:

a portable platform, said portable platform being electrically groundable;



an equipment module fabricated from electrically conductive material and housing the electrically powered components therein, said equipment module being electrically grounded to said portable platform;

a power module fabricated from electrically conductive material and being attached to said equipment module, said power module having a plurality of walls and wherein at least one said wall is lined with magnetic shield material;

at least one power supply cable entering said power module through at least one wall lined with a magnetic shield material and being coupled to at least one terminal block in one of said walls lined with magnetic shield material;

at least one other cable attached to said terminal block and at least one of the electrically powered components supported within the equipment module;

an articulated mast electrically grounded to said portable platform; and

an antenna conductor supported on said articulated mast and entering said equipment module to be coupled to a component housed therein.

40. The portable apparatus of claim 39 further comprising a temperature module coupled to said power module.

41. The portable apparatus of claim 40 further wherein said equipment module is supported on an electrically conductive frame and wherein said electrically conductive frame is attached to said portable groundable platform by at least one shock absorbing mount and at least one grounding conductor.

42. The portable apparatus of claim 41 wherein said portable platform comprises:  
an electrically conductive platform frame;  
a plurality of wheels mounted to said electrically conductive platform frame; and  
at least one electrically conductive outrigger assembly coupled to said electrically  
conductive platform frame and selectively movable between a grounding position and a non-  
grounding position.

43. The portable apparatus of claim 42 wherein said at least one said outrigger  
assembly is selectively laterally extendable and retractable relative to said electrically conductive  
platform frame.

44. The portable apparatus of claim 41 wherein said portable platform comprises:  
an electrically conductive platform frame; and  
a plurality of electrically conductive outrigger assemblies coupled to said electrically  
conductive platform frame.

45. The portable apparatus of claim 44 wherein each said outrigger has a selectively  
extendable and retractable support leg therein.

46. The portable apparatus of claim 45 wherein said selectively extendable and  
retractable support leg may be selectively extended and retracted relative to the vertical support  
housing by a crank assembly.

47. An articulated mast, comprising:  
a base member; and  
at least two mast segments pivotally interconnected in series and being supported by said mast base, said pivotally interconnected mast segments being selectively pivotable between a position wherein said mast segments are coaxially aligned and positions wherein said mast segments are not coaxially aligned.

48. The articulated mast of claim 47 wherein said at least two pivotally interconnected mast segments includes a first mast segment pivotally coupled to said base member and being selectively movable between a position wherein said first mast segment is coaxially aligned with a portion of said base member and other positions wherein said first mast segment is not coaxially aligned with said base member.

49. The articulated mast of claim 48 wherein said first mast segment is pivotally coupled to said base member by a first joint assembly comprising:  
a first hinge block coupled to an end of said base member; and  
a second hinge block pivotally hinged to said first hinge block and coupled to an end of said first mast segment.

50. The articulated mast of claim 49 wherein said base member comprises:  
a mast post coupled to said portable platform and protruding therefrom and wherein said first hinge block comprises:

a mast socket in said first hinge block, said mast socket sized to receive an end of said mast post therein; and

a first hinge assembly mounting portion on said first hinge block adjacent said mast socket and wherein said second hinge block comprises:

first socket in said second hinge block, said first socket sized to receive an end of said first mast segment therein; and

a second hinge assembly mounting portion on said second hinge block adjacent said first socket and wherein said first joint assembly further comprises a hinge assembly mounted to said first and second hinge assembly mounting portions such that when said first mast segment is coaxially aligned with said mast post, an end of said first hinge block is in confronting relationship with an end of said second hinge block.

51. The articulated mast of claim 50 further comprising first releasable retaining means for selectively retaining said end of said first hinge block in confronting relationship with said end of said second hinge block.

52. The articulated mast of claim 51 wherein said first releasable retaining means comprises apparatus selected from the group consisting of bolts, pins and clamps.

53. The articulated mast of claim 49 wherein said first and second hinge blocks are fabricated from cast metal.

54. The articulated mast of claim 49 wherein said first and second hinge blocks are fabricated from metal and are of welded construction.

55. The articulated mast of claim 48 further comprising a second mast segment pivotally coupled to an end of said first mast segment.

56. The articulated mast of claim 55 wherein said second mast segment is pivotally coupled to said first mast segment by a second joint assembly comprising:

a third hinge block coupled to the end of said first mast segment; and

a fourth hinge block pivotally hinged to said second hinge block and coupled to an end of said second mast segment.

57. The articulated mast of claim 55 further comprising a third mast segment pivotally coupled to an end of said second mast segment.

58. The articulated mast of claim 57 wherein said third mast segment is pivotally coupled to said second mast segment by a third joint assembly comprising:

a fifth hinge block coupled to another end of said second mast segment; and

a sixth hinge block pivotally hinged to said second hinge block and coupled to an end of said third mast segment.

59. The articulated mast of claim 58 wherein said second mast segment is selectively pivotable relative to said first mast segment from a position wherein said second mast segment is

adjacent to said first mast segment and another position wherein said second mast segment is coaxially aligned with said first mast segment.

60. The articulated mast of claim 59 wherein said third mast segment is selectively pivotable between a position wherein said third mast segment is adjacent said second mast segment and another position wherein said third mast segment is coaxially aligned with said second mast segment.

61. The articulated mast of claim 57 wherein said second mast segment is selectively pivotable relative to said first mast segment from a position wherein said second mast segment is coaxially aligned with said first mast segment and another position wherein said second mast segment is adjacent said third mast segment.

62. The articulated mast of claim 61 wherein said third mast segment is selectively pivotable between a position wherein said third mast segment is coaxially aligned with said second mast segment and another position wherein said third mast segment is between said first mast segment and said second mast segment.

63. The articulated mast of claim 57 further comprising an antenna supported by said third mast segment.

64. Apparatus for housing electrically powered components, said apparatus comprising:

an electrically groundable platform having a plurality of legs attached thereto;  
a shell supported on said electrically groundable platform and being electrically grounded thereto, said shell having a plurality of exterior wall portions and housing the electrically powered components therein, said shell fabricated from electrically conductive material;  
an enclosure having a common exterior wall portion with said shell and being attached thereto, said common exterior wall portion being lined with a magnetic shield material; and  
at least one power supply cable entering said enclosure through said common exterior wall portion and said magnetic shield material.

65. The apparatus of claim 64 wherein said legs comprise leg assemblies that are selectively extendable and retractable.

66. The apparatus of claim 65 wherein at least one said leg is selectively laterally extendable and retractable relative to said electrically groundable platform.

67. The portable apparatus of claim 66 wherein each said leg assembly comprises:  
a vertical support housing having a selectively extendable and retractable support leg therein; and  
a lateral support member telescopingly received in a corresponding portion of said electrically groundable platform and coupled to said vertical support member such that said vertically support member can be selectively laterally extended and retracted relative to said electrically groundable platform.

68. The portable apparatus of claim 67 wherein said selectively extendable and retractable support leg may be selectively extended and retracted relative to the vertical support housing by a crank assembly.

69. The apparatus of claim 64 wherein said electrically groundable platform comprises an electrically conductive frame.

70. The apparatus of claim 64 wherein said electrically conductive frame supports at least one floor panel thereon.

71. The apparatus of claim 70 wherein at least one said floor panel is fabricated from wood.

72. The apparatus of claim 64 further comprising a selectively extendable mast supported on said electrically groundable platform and electrically grounded thereto.

73. The apparatus of claim 72 wherein said selectively extendable mast is articulated.

74. The apparatus of claim 72 wherein said selectively extendable mast comprises:  
a mast base supported on said electrically groundable platform and being electrically grounded thereto; and

a series of at least two pivotally interconnected mast segments supported by said mast base.



75. The apparatus of claim 72 wherein said selectively extendable mast comprises:  
a mast base supported on said electrically groundable platform and being electrically grounded thereto; and

a first mast segment pivotally coupled to said mast base and being selectively movable between a position wherein said first mast segment is coaxially aligned with a portion of said mast base and other positions wherein said first mast segment is not coaxially aligned with said portion of mast base.

76. The apparatus of claim 75 wherein said first mast segment is pivotally coupled to said mast base by a first joint assembly comprising:

a first hinge block coupled to an end of said mast base; and

a second hinge block pivotally hinged to said first hinge block and coupled to an end of said first mast segment.

77. The apparatus of claim 76 wherein said mast base comprises:

a mast post coupled to said portable platform and protruding therefrom and wherein said first hinge block comprises:

a mast socket in said first hinge block, said mast socket sized to receive an end of said mast post therein; and

a first hinge assembly mounting portion on said first hinge block adjacent said mast socket and wherein said second hinge block comprises:

first socket in said second hinge block, said first socket sized to receive an end of said first mast segment therein; and

a second hinge assembly mounting portion on said second hinge block adjacent said first socket and wherein said first joint assembly further comprises a hinge assembly mounted to said first and second hinge assembly mounting portions such that when said first mast segment is coaxially aligned with said mast post, an end of said first hinge block is in confronting relationship with an end of said second hinge block.

78. The apparatus of claim 77 further comprising first releasable retaining means for selectively retaining said end of said first hinge block in confronting relationship with said end of said second hinge block.

79. The apparatus of claim 78 wherein said first releasable retaining means comprises fasteners selected from the group consisting of bolts, pins and clamps.

80. The apparatus of claim 76 wherein said first and second hinge blocks are fabricated from cast metal.

81. The apparatus of claim 76 wherein said first and second hinge blocks are fabricated from metal and are of welded construction.

82. The apparatus of claim 75 further comprising means for pivoting said first mast segment between said position wherein said first mast segment is coaxially aligned with said mast base and other positions wherein said first mast segment is not coaxially aligned with said mast base.

83. The apparatus of claim 82 wherein said means for pivoting comprises a device selected from the group of devices consisting of a hydraulic cylinder, a pneumatic cylinder, and a stepper motor.

84. The apparatus of claim 75 further comprising a second mast segment pivotally coupled to an end of said first mast segment.

85. The apparatus of claim 84 wherein said second mast segment is pivotally coupled to said first mast segment by a second joint assembly comprising:

a third hinge block coupled to the end of said first mast segment; and

a fourth hinge block pivotally hinged to said second hinge block and coupled to an end of said second mast segment.

86. The apparatus of claim 84 further comprising a third mast segment pivotally coupled to an end of said second mast segment.

87. The apparatus of claim 86 wherein said third mast segment is pivotally coupled to said second mast segment by a third joint assembly comprising:

a fifth hinge block coupled to another end of said second mast segment; and  
a sixth hinge block pivotally hinged to said second hinge block and coupled to an end of  
said third mast segment.

88. The apparatus of claim 86 wherein said second mast segment is selectively  
pivotable relative to said first mast segment from a position wherein said second mast segment is  
adjacent to said first mast segment and another position wherein said second mast segment is  
coaxially aligned with said first mast segment.

89. The apparatus of claim 88 wherein said third mast segment is selectively  
pivotable between a position wherein said third mast segment is adjacent said second mast  
segment and another position wherein said third mast segment is coaxially aligned with said  
second mast segment.

90. The apparatus of claim 86 wherein said second mast segment is selectively  
pivotable relative to said first mast segment from a position wherein said second mast segment is  
coaxially aligned with said first mast segment and another position wherein said second mast  
segment is adjacent said third mast segment.

91. The apparatus of claim 90 wherein said third mast segment is selectively  
pivotable between a position wherein said third mast segment is coaxially aligned with said  
second mast segment and another position wherein said third mast segment is between said first  
mast segment and said second mast segment.

92. The apparatus of claim 86 further comprising an antenna supported by said third mast segment.

93. The apparatus of claim 64 further comprising power generating means on said portable platform.

94. The apparatus of claim 93 wherein said power generating means at least comprises at least one battery.

95. The apparatus of claim 93 wherein said power generating means at least comprises a generator, at least one solar panel or at least one fuel cell.

96. The apparatus of claim 95 wherein said generator is propane powered.

97. The apparatus of claim 95 wherein said generator is gasoline powered.

98. The apparatus of claim 72 wherein an antenna conductor is supported on said selectively extendable mast, said antenna conductor entering said enclosure through said common exterior wall portion and said magnetic shield material.

99. A method of fabricating a shielded enclosure for housing electrically powered components therein, said method comprising:

forming a shell having walls, a floor and a roof out of electrically conductive material,

supporting the shell on an electrically groundable platform;  
electrically grounding the shell to the portable platform;  
orienting a magnetic shield material adjacent at least one, but not all of the walls of the shell;  
passing a power cable through one of the shell walls that has the magnetic shield material oriented adjacent thereto, such that the power cable passes through the adjacent magnetic shield material into the shell;  
coupling the power cable to the equipment within the shell; and  
grounding the platform to ground.

100. The method of claim 99 wherein said supporting the shell on said electrically groundable platform comprises attaching the shell to the electrically groundable platform with at least one shock absorbing assembly and wherein said electrically grounding said shell to said platform comprises attaching at least one electrical ground strap to the shell and the platform.

101. The method of claim 100 wherein said attaching the shell to the electrically groundable platform with at least one shock absorbing assembly comprises pivotally attaching the shell to the shock absorbing assemblies.

102. The method of claim 99 wherein said grounding said platform comprises vertically extending at least one conductive outrigger assembly between the electrically conductive platform and the ground to create an electrically conductive path from the platform to the ground.

103. The method of claim 99 further comprising laterally extending the outrigger assemblies out from the platform prior to said vertically extending.

104. The method of claim 99 further comprising:  
mounting an electrically conductive selectively extendable mast to the platform, such that the mast is electrically grounded thereto;  
coupling a conductor attached to the extendable mast to equipment within the enclosure;  
and  
moving the mast to an extended position.

105. The method of claim 104 wherein said moving the mast to an extended position comprises extending a selectively extendable and retractable cylinder mounted to the mast.

106. The method of claim 104 wherein the mast comprises a plurality of mast segments pivotally interconnected together in series and wherein said moving the mast to an extended position comprises:

pivoting the mast segments to a coaxially aligned orientation; and  
retaining the mast segments in the coaxially aligned orientation.

107. The method of claim 106 wherein said moving the mast further comprises extending a selectively extendable and retractable cylinder mounted to the mast such that the mast extends upwardly relative to the platform.

108. The method of claim 104 wherein said coupling the conductor attached to the extendable mast comprises:

passing the conductor through the shell walls that are adjacent to the magnetic shield enclosure such that the conductor enters the magnetic shield enclosure and a portion of the conductor exits the magnetic shield enclosure into the shell; and

coupling the portion of the conductor that exits the magnetic shield enclosure into the shell to the equipment within the shell.

109. The method of claim 99 further comprising moving the platform to another location and regrounding the platform.

110. The method of claim 109 wherein said moving comprises:

mounting the platform on wheels; and

towing the platform to the another location.

111. The method of claim 109 wherein said regrounding comprises vertically extending at least one conductive outrigger assembly between the electrically conductive platform and the ground to create an electrically conductive path from the platform to the ground.

112. The method of claim 111 further comprising laterally extending the outrigger assemblies out from the platform prior to said vertically extending.



113. The method of claim 109 further comprising:  
mounting an electrically conductive selectively extendable mast to the platform, such that the mast is electrically grounded thereto;  
coupling a conductor attached to the extendable mast to equipment within the enclosure;  
and  
moving the mast to an extended position.

114. The method of claim 113 wherein said moving the mast to an extended position comprises extending a selectively extendable and retractable cylinder mounted to the mast.

115. The method of claim 113 wherein the mast comprises a plurality of mast segments pivotally interconnected together in series and wherein said moving the mast to an extended position comprises:

pivoting the mast segments to a coaxially aligned orientation; and  
retaining the mast segments in the coaxially aligned orientation.

116. The method of claim 113 wherein said moving the mast further comprises extending a selectively extendable and retractable cylinder mounted to the mast such that the mast extends upwardly relative to the platform.

117. The method of claim 113 wherein said coupling the conductor attached to the extendable mast comprises:

passing the conductor through the shell walls that are adjacent to the magnetic shield enclosure such that the conductor enters the magnetic shield enclosure and a portion of the conductor exits the magnetic shield enclosure into the shell; and

coupling the portion of the conductor that exits the magnetic shield enclosure into the shell to the equipment within the shell.